

JPRS 78470

8 July 1981

China Report

SCIENCE AND TECHNOLOGY

No. 109

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CS0: 4008/356

Architecture

AUTHOR: CHEN Congen

ORG: None

TITLE: "Office Buildings under Unified Planning"

SOURCE: Beijing JIANZHU XUEBAO [ARCHITECTURAL JOURNAL] in Chinese No 4, 1981
pp 1-8

TEXT OF ENGLISH ABSTRACT: Reviewing the development of office buildings during the past several decades, the author points out that the trend has been toward highrise, underground and mixed-use centers. In some large cities of China, highrise buildings have also been built. However, they are still being built by separate organizations, each with its own service facilities, administrative quarters and living accommodations. This has brought difficulties to overall consideration in urban planning and big wastes in land utilization, building investments and maintenance expenses. The author proposes, therefore, that highrise office buildings should be built by unified planning which has the following advantages:

1. Highrise office buildings have an important role in urban planning in creating cityscapes, improving the environment and, above all, in saving land. A comparison made between provincial office buildings in Lanzhou built under unified planning and those separately built shows that the former has saved 60 percent or so in land use. It can also be seen that unified planning is an effective measure in remodeling old urban areas. At any rate, it is an inevitable trend toward the socialization of public facilities instead of everyone going his own way.

[Continuation of JIANZHU XUEBAO No 4, 1981 pp 1-8]

2. Unified planning also brings low unit building costs, more office spaces and fewer service areas.

The article discusses problems of unified planning, including analysis of functional requirements, design of plan, mass and elevation, types of structural forms, treatment of entourage, etc. Experiences in unified planning of office buildings in Gansu Province are included.

AUTHOR: Li Baokeng
et al.

ORG: None

TITLE: "Hall of Science and Technology, Chinese Academy of Sciences, Beijing"

SOURCE: Beijing JIANZHU XUEBAO [ARCHITECTURAL JOURNAL] in Chinese No 4, 1981
pp 9-14

TEXT OF ENGLISH ABSTRACT: The plan for the Hall of Science and Technology, Chinese Academy of Sciences, Beijing, includes 30 exhibition areas of different sizes, a lecture theater, panorama cinema, classrooms, library, information service and corresponding accessories, with a total building area of 52,000 sq m, and occupying most of 5.5 hectares. A competition was held at the Beijing Institute of Architectural Design in July, 1980. Twenty-five design projects were submitted within five weeks. The first prize design shown in this article has the following good points: 1. Clear division of functions in different parts with good interconnection. 2. Flexibility in the use of different halls. 3. Emphasis on the central part of exhibition halls, lecture hall and laboratory and, at the same time, unity with other minor parts. 4. Provisions for a nice environment. 5. Space for future extension reserved. At the same time, a basic unit of building construction has been adopted in the design so that variety in interior division as well as unity in exterior treatment can be obtained. A traditional garden layout technique has been absorbed in the courtyards. The exhibition halls are so designed that either one by itself or several separate ones may be used.

AUTHOR: MEI Jikui
et al.

ORG: None

TITLE: "On Multi-purpose Gymnasiums"

SOURCE: Beijing JIANZHU XUEBAO [ARCHITECTURAL JOURNAL] in Chinese No 4, 1981
pp 15-23

TEXT OF ENGLISH ABSTRACT: An investigation of about 30 gymnasiums in different cities of China has been made by the author with respect to the trend toward multi-purpose gymnasiums, including functional requirements, technical principles and architectural dispositions. The author reveals that most of the newly built gymnasiums meet the demands of athletic events well, but not artistic performances, mass meetings and physical training. Data from investigations show that utilization ratios of these gymnasiums are rather low. In many cases, there exist problems of high cost, low efficiency and flashiness and superficiality. Based on 30 years of practice, the author points out that sporting events alone cannot make full use of gymnasiums, while auditoriums, theaters and cinemas now existing are too deficient to meet demands. Therefore, multi-purpose gymnasiums should be seriously considered.

The multi-purpose gymnasium should be designed primarily for athletic events, performances and entertainment. In plan and space arrangement, the arena should

[Continuation of JIANZHU XUEBAO No 4, 1981 pp 15-23]

have a proper size and location. The arrangement of seats should meet the demands for different occasions without obstructions in the view line. An arena of 30-32 x 42-46 m is generally preferred for ball matches. Movable stands with seats can be utilized to reduce or extend the area of the arena. Analyses have been made by the author on size and position of the arena, ways of seat arrangement, design of view line and evacuation of the audience. Several proposed designs of different types and capacities are included in the article.

AUTHOR: BAI Demao

ORG: None

TITLE: "Can Satellite Towns Control Urban Scale?"

SOURCE: Beijing JIANZHU XUEBAO [ARCHITECTURAL JOURNAL] in Chinese No 4, 1981 pp 24-27

TEXT OF ENGLISH ABSTRACT: Satellite towns are usually considered an important measure in controlling urban scale and reducing urban population of the principal town. From foreign experiences and the case of Beijing, it is still a question to be ascertained, whether satellite towns will really accomplish the expected results. Experiences abroad show that the development of satellite towns should have the following prerequisites: 1. There should be opportunities for different occupations, not only an ample number of jobs but also enough options. 2. There should be housing accommodations complete with service facilities not lower in level than those in the town center. 3. Good living conditions, including housing area, living environment and communication facilities better than those in the town center. 4. Existing villages near trunk roads should be utilized. 5. It should be located a certain distance from the town center.

There are some cases in which large investments have been made while the satellite town is actually a dormitory town. A large number of people still commute to the

[Continuation of JIANZHU XUEBAO No 4, 1981 pp 24-27]

center to work or study, with very few actually having settled in the satellite town. In the case of Fangshan of Beijing, most of the basic population have come from the countryside or other towns and not from the town center.

The author considers the building up of new small towns to be necessary. However, the control of the principal town in scale and population cannot rely solely upon satellite towns. The trend of city development in various countries shows that cities grow into conurbations or linear cities. In China, planned development of new cities should be considered to relieve the function of the old cities and to control the central town in scale and population. Regional planning should be used in taking advantage of the socialist system.

AUTHOR: None

ORG: Beijing Society of Civil Engineering and Architecture

TITLE: "Competition on Residential District Design Held in Beijing"

SOURCE: Beijing JIANZHU XUEBAO [ARCHITECTURAL JOURNAL] in Chinese No 5, 1981 pp 1-8

TEXT OF ENGLISH ABSTRACT: An architectural competition on residential district project design was jointly sponsored by the Capital Construction Committee of the Beijing Municipality and the Beijing Society of Civil Engineering and Architecture in August, 1980. The competition was not merely an academic activity, since the winning design will actually be carried out. It was intended to bring planners and architects into full play in developing the capital into a modern city of beauty and sanitation, and to raise their abilities in community design.

The district is to be located at Tayuan, South Beiyi Road, in the northwest suburb with a lot of 16.14 hectares. The underlying principle of the program calls for a quiet, convenient and comfortable living environment under limited expenses. The gross residential density of the district is specified at 700-800 residents per hectare, and the area of greenery not less than 1 sq m per resident. The indexes of public service facilities are also specified and an estimate required.

[Continuation of JIANZHU XUEBAO No 5, 1981 pp 1-8]

Out of 72 designs submitted through 20 January 1981, 1 first prize, 2 second prizes, 4 third prizes and 10 honorable mentions have been awarded. The Teaching and Research Group on City Planning, Department of Architecture, Qinghua University, is the winner of the first prize. The authorities of Beijing Municipality have decided to put the design into execution through the City Development Company.

AUTHOR: BAI Demao

ORG: None

TITLE: "On the Winning Design of the Tayuan Residential District Project Competition"

SOURCE: Beijing JIANZHU XUEBAO [ARCHITECTURAL JOURNAL] in Chinese No 5, 1981 pp 9-16

TEXT OF ENGLISH ABSTRACT: Architects are expected to create for the people better living environments instead of the usually monotonous and stereotyped dwellings. From the recent architectural competition held in Beijing, one can see the rich imagination and creativeness of the masses.

Creation and Reality. Residential district design is a creation closely based on reality. It is important to have good conception, while the conception is rooted in actual life. The first prize design has a vigorous composition and rational disposition, with rich variations in space, incorporating creation and reality.

Variety and Regularity. Architects should be skilled at obtaining regularity and variety at the same time. In many project designs, the dwelling houses are arranged in functional groups according to the organization of neighborhood committees while maintaining rich variety in form, such as symmetry, asymmetry, repetition, etc.

[Continuation of JIANZHU XUEBAO No 5, 1981 pp 9-16]

Utility and Economy. Designers of these projects strive for utility and economy in problems such as number of stories, space between buildings, conservation of energy, etc. Different approaches to the number of stories are tried. It is believed that a number of highrise buildings is necessary in Beijing due to the sharp condition of usable land. However, the total building area of highrise structures should not exceed 40 percent of the grand total.

Service Facilities. Most of the projects have the commercial center placed at the north and south entrances, affording convenience to the inhabitants.

AUTHOR: CHANG Kaiji
CHEN Dengao
et al.

ORG: None

TITLE: "Competition on Rural Dwelling Project Designs for Beijing"

SOURCE: Beijing JIANZHU XUEBAO [ARCHITECTURAL JOURNAL] in Chinese No 5, 1981
pp 19-21

TEXT OF ENGLISH ABSTRACT: A competition on rural dwelling project design was jointly sponsored by the Capital Construction Committee of Beijing Municipality and the Beijing Society of Civil Engineering and Architecture. One hundred twenty-one designs had been submitted through the end of February, 1981. Awarded were 1 first prize, 4 second prizes and 14 third prizes.

Prize winning designs from this competition have the following characteristics:
1. Some features of traditional rural dwellings have been absorbed in the plan arrangement. The usual practice of going into one room through another has been avoided. The depth of the buildings has been increased for the benefit of rational interior arrangement. In designs of storied buildings, separate stairs are provided for each family for privacy. 2. Designs of detached, semi-detached and row houses are provided. 3. Local building materials are considered for ease of construction. It is especially noteworthy that a set of systematized designs has

[Continuation of JIANZHU XUEBAO No 5, 1981 pp 19-21]

been made with limited numbers of parameters to form basic units from which different designs of one or more stories can be grouped.

One can see from the above some of the apparent trends in rural dwelling development, i.e., measures toward standardization, industrialization and diversification have been emphasized to hasten construction and economy of land use.

AUTHOR: YANG Hongxun

ORG: None

TITLE: "Energy Saving Underground Dwellings in Loess Regions"

SOURCE: Beijing JIANZHU XUEBAO [ARCHITECTURAL JOURNAL] in Chinese No 5, 1981 pp 68-73

TEXT OF ENGLISH ABSTRACT: The cave dwellings still used in the wide loess regions of China are a good source from which to draw lessons in designing modern housing.

In north China there exists a vast expanse of loess from which archaeological finds show remains of trenches of 4 or 5,000 years ago and those of subterranean and semi-subterranean dwellings of neolithic age. Cave dwellings still in use today in the countryside are of a form directly inherited from ancient times.

Cave dwellings used today in Henan, Shanxi, Shaanxi and Gansu Provinces have the advantages of ease in construction, low in cost, good heat insulation and economical land use. The saving of heating and cooling devices, and thus saving of energy, does not only lower the initial and maintenance expenses, but also aids in preventing air pollution. Wide experiences in construction and usage afford us useful references and inspiration in housing design today. Subterranean and semi-subterranean structures are more practical than highrise structures in housing development

[Continuation of JIANZHU XUEBAO No 5, 1981 pp 68-73]

of present-day China, both economically and technically. It is suggested that planning of experimental modern subterranean settlements should be tackled based on investigations and research on improvements of traditional methods.

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CSO: 4009/305

Electronics

AUTHOR: ZHENG Shuchang [6774 2579 1603]

ORG: Shihezi Paper Plant, Xinjiang

TITLE: "The GHF Silicon Rectifier Power Saving Technique in Electrolytic Process"

SOURCE: Shanghai DIANSHIJIE [ELECTRICAL WORLD] in Chinese No 4, Apr 81 p 13

ABSTRACT: The current converter used at the Shihezi Paper Plant for electrolysis of table salt is the GHF (3000 amp, 70-120 v) silicon rectifier. It outputs DC current. The voltage is regulated by a saturation reactor so that the rectifying efficiency and the power factor of the entire system are improved. In the electrolytic production process, there is no need to adjust the load regularly. The saturation reactor is needed only when the voltage of the outside power source fluctuates a great deal. When the reactor is not needed, it can be temporarily cut off to save power. This is a recent improvement to the silicon rectifier at the plant. Since its adoption in the beginning of 1980 the economic benefit has been rather obvious. For the production of every ton of caustic soda, the power consumption has been 249 kw less. The power factor of the rectifier system is raised from 0.87 to 0.93. The improved system is explained briefly.

AUTHOR: WANG Mingyu [3769 0682 6235]

ORG: The 300 Plant, Hunan Province

TITLE: "Improvement to the Lightning Arrester Conduction Current Test Method"

SOURCE: Shanghai DIANSHIJIE [ELECTRICAL WORLD] in Chinese No 4, Apr 81 p 15

ABSTRACT: The lightning arrester is the major protection of the electrical equipment from excessive voltage and the quality of the lightning arrester affects the equipment's safe operation directly. Every year, conduction current test must be performed during the storm season to insure the proper operating condition of the arrester and the test is rather labor consuming. The author and colleagues made some improvements in the test circuit. Instead of the original high voltage static electricity voltmeter, a current switch (XH₁ 5 amp) and a high resistance rod are now used. The improvement has made it possible not to move the heavy instrument around to test every lightning arrester in the plant. The procedure of applying the new testing method is described briefly.

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